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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/711,025   | 11/09/2000  | Liran Brecher        | TI-29893            | 6766             |
| 7590   | 12/13/2004  |                      | EXAMINER            |                  |
| Jackson Walker, L.L.P.<br>Suite 600<br>2435 North Central Expressway<br>Richardson, TX 75080 |             |                      | CORRIELUS, JEAN B   |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2637                |                  |

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/711,025             | BRECHER ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Jean B Corrielus       | 2631                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10 September 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20,22-24 and 26-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-19 and 26-31 is/are allowed.
- 6) Claim(s) 20 and 22-24 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION.**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Murakami US patent No. 5,175,747.

Murakami discloses a method and apparatus (fig. 1) having a feed forward digital section 200 having an input 1 for receiving digital transmission bursts; the feedforward section 200 defined a plurality of feedforward coefficients ( $C_i(n)$ ); a decision element 70 having an input coupled to said feedforward digital filter for deciding what values are included in the received signal, said decision element having an output for providing a signal indicative of the decided symbols; a feed back digital section 300 having an input coupled to the output of the decision element 70 for filtering said signal indicative of the decided symbols, said feedback section 300 having an output for providing a filtered signal; said output coupled to said input of said decision element , said feedback filter defined a plurality of feedback coefficients ( $D_i(n)$ ); and a coefficient determiner (100 and 101) coupled to said FF and FB filters using a first coefficient determination algorithm 100 to determine respective first values for said coefficients and using a second coefficient determination algorithm 101 to determine respective second values for said

coefficients, wherein the first and second algorithms differ from one another see col. 5, line 66-col. 6, line 1 and said coefficient determiner having an output coupled to said feedforward digital filter and said feedback filter for outputting said first and said second values of said filters see col. 6, lines 12-16 and lines 42-45. Note that at col. 6, lines 1-31 that Murakami teaches that the first algorithm A acts only on a portion of the coefficient not on the remainder see fig. 2. Murakami further teaches that the tap coefficients generated by the second algorithm are used to equalize (decode) the received data (symbols), see abstract lines 5-10, col. 5, lines 58-65 and see fig. 1.

As per claim 22, at col. 6, lines 39-40, Murakami teaches that the two algorithms differ in computation complexity.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami.

As applied to claim 20 above, Murakami discloses every feature of the claimed invention but does not explicitly teach the use of the least square it only teaches at col. 9, lines 13-14 that other adaptive algorithm can be used. Given the fact that Least Squares Algorithm is a well-known adaptive algorithm, it would have been obvious to

one skill in the art at the time of the invention to incorporate such an algorithm in Murakami in order to take advantage of its fast convergence property.

As per claim 24 the second algorithm is a LMS algorithm see col. 9, line 14.

***Allowable Subject Matter***

5. Claims 1-19 and 26-31 are allowed.
6. Applicant's arguments filed 9/10/04 have been fully considered but they are not persuasive. It is alleged that Murakami does not teach that the coefficient values determined by the second coefficient determination algorithm are used to decode symbols. However, it is noted in the abstract section, lines 5-10, and col. 5, lines 58-65 and fig. 1 that Murakami teaches the tap coefficients generated by the second algorithm are used to equalize (decode) the received data (symbols).
7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Maxi-Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-3086. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jean B Corrielus  
Primary Examiner  
Art Unit 2637  
12-09-04